REMARKS

Upon entry of this amendment, claims 1, 2, 4-7 and 9-12 are pending, each of which stands rejected. No claims have been amended.

Claim Rejections under 35 U.S.C. § 102(e)

Claims 1-2, 4-7 and 9-12 are rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,432,585 to Kawakami. Applicant respectfully traverses and, for the following reasons, requests reconsideration and withdrawal of this rejection.

To anticipate a claim, a reference must teach, expressly or inherently, each and every element required by the claim as interpreted by one of ordinary skill in the art. MPEP § 2131.

Claim 1

Kawakami does not teach each element required by claim 1. Claim 1 requires a negative electrode material with a composition of: element A (copper or iron); 5 to 40% by weight of element B (silicon or tin), and 1 to 50% by weight of element C (indium, antimony, bismuth, and/or lead).

In contrast, Kawakami discloses an electrode material with a grained host matrix material of tin (Sn) alloy consisting of "Sn and one or more elements selected from the group consisting of Sb, Bi, Pb, Ni, Cu, Ag, and Zn," where the alloy contains tin in the range of 50% to less than 100% (col. 16, ln. 1-10). Thus, Kawakami does not teach a negative electrode material with a composition including tin (element B) at 5 to 40% by weight, as required by claim 1.

Kawakami also discloses an electrode material of tin, bismuth, and copper, where the bismuth and copper were present in an atomic ratio of 10% each (see col. 52, ln. 50-60). In other words, Kawakami requires there to be eight times the number of tin atoms as bismuth or copper atoms (*i.e.*, 8:1:1). Simple calculations show that this formulation of material contains 78% tin by weight.[1] Thus, Kawakami does not teach a negative electrode material with a composition including tin (element B) at 5 to 40% by weight, as required by claim 1.

Furthermore, Kawakami teaches away from including tin at less than 50% because, according to Kawakami, "a problem is liable to entail in that the amount of lithium to be taken-in is diminished to decrease the battery capacity" (col. 16, ln. 10-12). Thus, Kawakami will not support a future obviousness rejection that attempts to overcome the deficiency of teachings shown above.

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[1] atoms(tin m.w.) / [atoms(tin m.w.) + atoms(bismuth m.w.) + atoms(coppper m.w.)]

or 8(119) / [8(119) + 1(209) + 1(64)] = 0.78

The above argument applies equally to claim 1 and claims dependent upon claim 1, such as claims 2 and 4-5. These arguments also apply to independent claim 6, and claims dependent thereon, such as claims 7 and 9-12, to the extent these claims require a negative electrode active material of composition correspondent to that of claim 1.

Additionally, dependent claims have further patentable features as described below.

Claims 2 and 7

Claims 2 and 7 are rejected as anticipated by Kawakami but the Office has failed to provide the basis for such rejection, in this action or in previous actions. Claims 2 and 7 each require the first element A to be copper, second element B to be silicon, and third element C to be indium or antimony.

In rejecting a claim as anticipated, the particular part of a complex or multi-invention reference that is relied on must be designated as nearly as practicable. MPEP §706; 37 CFR 1.104(c)(2). While the Office has rejected claims 2 and 7 as anticipated by Kawakami, the Office has failed to provide the basis for such rejection, as shown by the following passage from the present Office Action, p. 3, ¶3:

> With respect to claims 1 & 6, Kawakami teaches a negative electrode comprising tin, copper and bismuth (col. 52, lines 45-65). With respect to claims 2 & 7, the reference teaches a negative electrode comprising Regarding claim 6, the anode is employed in a non-aqueous electrolyte (col. 29, lines 10-20).

Furthermore, Applicant's review of previous Office Actions (of 2/10/05 and 7/27/05) reveals the Office directed its rejection of claims 2 and 7 to a composition of "tin, copper and bismuth" (see 7/27/05 Office Action, p. 3, 2/10/05 Office Action, p. 3). But claims 2 and 7, both presently and at the time of the previous actions, was directed to a negative electrode active material including a compostion of element A being **copper**, element B being **silicon**, and element C being **indium and/or antimony**. Thus, neither this nor the previous Office Actions makes clear the basis for rejection of claim 2 and 7.

Applicant respectfully requests the Office to provide the particular part of Kurakawa—such reference being sixty eight (68) pages in length detailing several different inventions—relied upon in rejecting claims 2 and 7, such claims requiring a composition of: copper; silicon; and indium and/or antimony.

Claims 4-5 and 9-10

The Office asserts that the requirement of low crystallinity of the composition in claims 4 and 9, and the requirement of an amorphous composition in claims 5 and 10, are both "inherent" in the electrode of Kawakami because this reference "employs the same electrode material set forth by Applicant."

To establish inherency, the extrinsic evidence must make clear that the missing descriptive matter is necessarily present in the thing described in the reference. MPEP §2112(IV). The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. MPEP §2112(IV).

The Office has failed to establish that the electrode composition of Kawakami is inherently of low crystallinity and amorphous. In fact, it is unclear how the same electrode composition of Kawakami can be both inherently low crystalline and inherently amorphous, as asserted by the Office. The crystallinity, or lack thereof, is a function of *how the component materials of the composition are formed* into the active material, and not an inherent property of the components themselves.

The following passage of the specification of the present application makes clear that the three components A, B, and C of the negative electrode composition can be combined in such a way as to produce different structural characteristics (*i.e.*, crystalline, low crystalline, or amorphous):

> The composition of the negative electrode active material may be a crystalline intermetallic, or preferably a low crystalline intermetallic. The composition is more preferably an amorphous intermetallic. If the composition is not amorphous, another element having an atomic diameter which is different from those of the elements contained in the composition may be added to the composition in order to degrade the crystallinity of the composition. ¶0026.

Furthermore, various passages of the specification teach how such different characteristics can be obtained. For example, ¶0028 of the specification of the present application provides that the "resulting composition must be quenched in order to make the composition amorphous."

As shown above, the Office has failed to show that the composition of Kawakami is possessed of a low-crystallinity structure (as required in claims 4 and 9) or of an amorphous structure (as required in claims 5 and 10). As such, Kawakami does not teach all requirements of claims 4-5 and 9-10.

CONCLUSION

Applicant respectfully requests withdrawal of the rejections and believes that the claims as presented represent allowable subject matter. Applicant requests the Examiner to note the new Attorney information provided below. If the Examiner desires, Applicant welcomes a telephone interview to expedite prosecution. Applicant believes there is no fee due at this time. However, the Commissioner is hereby authorized to deduct any deficiency or credit any overpayment to Deposit Account No. 19-3140.

Respectfully submitted,

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